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Of The
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Hearing On The
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Testimony Of
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Senator Gordon and Members of the Subcommittee, I am Calvin Hoggard, City Manager of the City of SeaTac, Washington. I appear and testify today on behalf of the City of SeaTac. Attending here with me today is Mayor Shirley Thompson. She and other Council members in our City share the concerns I will express today. Thank you for your serious interest in the safety of pipelines in our communities and for the opportunity to testify.

The City of SeaTac is a ten-year old city that surrounds Sea-Tac International Airport, south of Seattle. The City has 25,000 residents. About 35,000 people come to work in the City each day. Additionally, at any given time there are approximately 10,000 guests staying in hotel rooms within the City and we have about 75,000 visitors passing through our city each day. A key economic factor in the City's vitality is the Airport. For this reason among others, SeaTac has not joined with six neighboring jurisdictions in lawsuits fighting the expansion of the Airport but has taken a course to cooperate with this essential transportation facility. I mention this to indicate the generally supportive attitude of the City toward federally regulated transportation facilities.

In the case of Olympic Pipeline we have a serious problem which we share with other local governments along the 400-mile pipeline corridor in Washington and Oregon. **We do not believe the pipeline is reasonably safe in our communities.** In the SeaTac area Olympic Pipeline operates an east to west

lateral pipeline or pipeline spur coming from the main pipeline. The lateral to SeaTac runs from Olympic's Renton station to the Sea-Tac Airport. The pipeline flow to SeaTac is intermittent. This on-off flow is an added stress to the line from pressure cycling caused by the change in flow. When not making deliveries to SeaTac this lateral sits full of jet fuel under pressure.

Until the June 10, 1999 pipeline spill and explosion in Bellingham, it is fair to say that few communities or government agencies in Washington were particularly aware of the safety issues surrounding hazardous liquid pipelines. Many of these pipelines – and there are thousands of miles of such pipe nationwide – were installed 40 to 50 years ago, prior to significant environmental regulations. The oil companies correctly emphasize that transporting oil and jet fuel by pipeline is much preferable to the usual alternatives – transportation by highway tanker truck and by barge. In SeaTac, where millions of gallons per year of jet fuel are pumped to the airport, an amount projected to greatly increase, a safe pipeline conveyance is clearly preferable to the large number of trucks which would otherwise be traversing our streets.

The main Olympic pipeline was built in 1965 making it almost 35 years old. The SeaTac segment of the pipeline, a 12" diameter spur, was built later than most of the rest, in 1971. The 12-inch diameter pipeline, which is constantly under pressure (800 pounds per square inch) with jet fuel, runs from the City of Renton westward

across the Green River Valley crossing the Green River. The Green River is a major salmon bearing and navigable river flowing into Elliott Bay in Seattle's waterfront. From the Green River the pipeline continues westward running just under a mile along Strander Boulevard between the heavily congested Southcenter Shopping Mall and Target and other stores. At Southcenter Parkway it turns south and runs about half a mile along the Parkway that is lined with commercial and retail development. It then turns west going through the City of SeaTac about a quarter mile under Interstate 5 up a very steep hill above the City of Tukwila (frequently mentioned in media traffic reports as "the Southcenter Hill" due to its common traffic congestion). It then travels about a mile and one-half along South 170th Street, a residential street lined with homes, a corner grocery and one of our fire stations. Next it turns south along International Boulevard, an arterial that is heavily congested much of the time, for about a mile then turns southwestward into a large 5 million gallon tank farm at the International Airport. From the tank farm multiple smaller high-pressure lines run around the Airport to feed various locations traveling under City streets much of the way. The SeaTac Lateral is not currently well marked or posted within the City to warn potential excavators of its presence. There are very few signs, perhaps 3 or so in the entire City. The City itself only recently learned about the presence of the smaller pipelines as we pushed to obtain more detailed information in the aftermath of the Bellingham accident.

Valve placement and control are big issues – if there is a leak, how far back up the

line is the place where the spigot can be turned off, and how quickly? In the hilly terrain of western Washington, how do you stop flow draining downhill without properly placed valves? For example, there is only one valve in the SeaTac spur. It is east of Tukwila. Therefore a pipe burst at the foot of the hill near Southcenter in Tukwila would allow the pipe to drain downhill and out of the rupture with no valve to stop it. Some valves are manual, some computer-controlled. In shutting a valve, one must also shut off the flow coming into the system; otherwise pressure will build up. The pressure in the main pipeline is well over 1,000 pounds per square inch, and ranges up to 800 PSI in the SeaTac Lateral, meaning that any flow problem not handled correctly will quickly become a disaster. But adding more valves can upset the flow dynamics of the entire line, and cannot necessarily be done at each City limits. The addition of valves needs engineering analysis and careful computation. State level oversight seems right to attend to both local and system-wide concerns like these.

From Sea-Tac Airport to the Green River, a distance of almost four miles of heavily populated area, there is no shut off valve of any kind. The first one is at the Green River itself. At that location immediately on each side of the river is one valve. A pipeline rupture anywhere along this entire area would seriously risk loss of life and severe environmental and / or property damage. A pipe rupture on Strander Boulevard, for example, would release under high pressure and gravity pressure all the contents of the pipe draining down the hill from SeaTac into a heavily populated

shopping area. As I understand it from our fire officials portions of the fuel would likely vaporize into a cloud when released into normal air pressure. The rest would puddle up or flow on the ground. The vapor would be heavier than air so it would also travel along the ground until encountering an ignition source that would cause it to explode with devastating results. Our fire and police could only get people away and watch as the pipeline emptied if we were lucky enough to have any time to have emergency personnel at the scene to do that.

Given the state of leak detection and current operator practices we may not have emergency personnel available at the site of a leak or rupture in any timely way unless we get lucky. Olympic pipeline monitors fuel pressure at a central station in Renton but even if they detected the rupture, without valves they could also do nothing to prevent the gravity release of thousands of gallons from the pipe into the areas I have described. The leak detection system used at the Renton monitoring station only imprecisely monitors unexpected pressure drops in the 400-mile long line. When an unexpected significant drop in pressure is noticed, the first step taken by Olympic is to determine whether or not the pressure monitors are accurate. Then a person is dispatched to go physically see if the pressure drop has occurred because the line is leaking or ruptured. If it is leaking or ruptured then our City emergency personnel are to be notified.

Such delayed notification results in delayed response, so the City has been working

with Olympic since the Bellingham explosion to get earlier, immediate notification at the first hint of a problem because time is so critical, the hazards are so great and we are usually closer to the pipeline than Olympic to respond to check for leaks. The City has not received notification from Olympic of prior instances when there have been leaks. Nothing requires this sort of immediate notification.

One of our biggest concerns right now is incident response. We have not had contact with Olympic on this subject until only recently, at our urging. Since it's the local fire departments that will need to be quickly notified, send their trucks to put out fire and provide medical assistance, and local police that will help evacuate an area if necessary due to a spill, this local dialog is absolutely essential. Moreover, the pipeline's emergency response plan must be not just coordinated with, but approved by, the City Fire Department. At the very minimum, the federal law needs to require this type of coordination. Ideally, the federal level will assign to the local level the determination of what type of incident response planning fits the local area.

Although since the Bellingham explosion we have been pressing Olympic and we are pleased there has now begun to be some dialogue, we do not have a coordinated emergency response plan between the operator and the City's emergency response personnel. Nothing requires Olympic to work out such plans with local jurisdictions.

Though they have stated they have done so in literature, the Olympic Pipeline Company has not made substantive contact with law enforcement agencies in King County to plan and train for emergency responses involving pipeline fuel incidents. A poll of the King County Sheriff and Chiefs of Police in February 2000 showed that Olympic had not contacted any law enforcement agencies to establish a timeline to do so. Olympic Pipeline Company does not have acceptable policies and procedures, even today, to contact and coordinate with emergency responders of appropriate jurisdiction(s) in cases of suspected or confirmed leaks.

Olympic investigates incidents on their own which results in unacceptable delays in local jurisdictions efforts to contain, isolate, evacuate and/or otherwise mitigate the effects of incidents. This places responding police and fire personnel, and the surrounding community, in unnecessary jeopardy. Pipeline emergency management, like all emergency management is difficult, because emergencies by nature tend to be dangerous, dynamic, complex and confusing. Most emergency responders use the Incident Command System (ICS) to manage emergencies. Timely notice, accurate information, effective communication, organization, and training are essential elements of effective emergency response plans. Federal law must be changed to insure that pipeline companies are part of established emergency response teams.

In addition to the urban routing of a pipeline designed for a rural setting and with no

shutoff valves, the absence of signage to thwart third party damage, the weakness of leak detection and the lack of emergency response coordination, there are other reasons for our concern about pipeline safety.

Pipelines tend to move in the ground, the amount of movement depending on the type of soil, stresses on the pipeline, and whether the area is subject to such events as mudslides or earthquakes. Some communities have reported that the actual pipeline location, when checked by probing, is well outside the swath of land (usually 5-10 feet wide) where it was supposed to be. This can be partly due to movement after construction and partly due to lack of map accuracy based on the lack of requirements for engineer-stamped as-built drawings to be provided to local jurisdictions upon construction (i.e., the pipe was not placed in the exact location contemplated by the pre-design drawings). With GIS technology it seems more accurate pipeline location information could be easily provided if required.

There is no industry standard or even agreement as to an appropriate replacement schedule for old pipe. If one buys a house there are rules of thumb for the usual life of various building materials and components. Olympic and others in the oil industry believe that with proper maintenance and care, a pipeline will last forever. It seems to us that if this approach is taken, and it is being taken by Olympic and the pipeline industry generally, then strong emphasis must be placed on proper maintenance and care. Judging by the frequency of major accidents it appears to us that

adequate emphasis on maintenance is not happening in the industry in general or at Olympic.

One reason we feel it is unlikely that pipelines last forever is the “cathodic protection” problem. Cathodic protection provides a slight electric current running to the pipe outer surface which resist the tendency for iron to return, or corrode, to its natural state. But cathodic protection is not perfect. Among other concerns, another metal pipe or structure in the ground can interfere with the cathodic protection intended for the principal pipe.

Other reasons for potential damage to pipelines are strain from earth movements and the strain that can result from being under tremendously high, but varying, operating pressures for years and years, which can fatigue the pipeline. The stress points introduced by elevation variations such as in Washington also increases potential damage.

The actions of “Third Parties” are often a major source of damage. While not the dominant source, third party careless actions are a significant source of pipeline damage. Washington has a “one-call” system with signs near buried utilities encouraging contractors and do-it yourselfers to “call before you dig”. There is pipeline participation in this program, but there do not seem to be any mechanisms for ensuring that the signs stay in place. More often it appears that people call in

after they have hit something. Further, even if the call is made first, there is no guarantee that the company will respond appropriately. For example, prior to the Bellingham accident, Olympic was advised of digging by a contractor in close proximity to the pipe but may not have taken the necessary precautions to protect the pipe's integrity. Persons seeking permits from the City of SeaTac are informed of the pipeline and the need to avoid it, and to contact Olympic. Our recent road and drainage projects on S.170th had a representative of Olympic present to assure no damage to the line, as did the relevant sections of the International Boulevard projects. We would like to see requirements surrounding these sorts of activities that will better ensure the pipeline operator and contractor's follow up.

The overall federal pipeline regulatory situation appears to be a "Catch-22" since despite the laxness of the federal requirements, "federal pre-emption" prevents states or local communities from having stronger safety requirements of their own which should be tailored to the area's unique environment.

Safety is of course best achieved through adequate preventive measures such as inspection, testing and replacement of defective line segments. Pipeline companies tend to do more than the federal government requires, because the government requires so little. For instance, while there is currently no requirement for in line testing using a smart pig, many companies (including Olympic) use this technique from time to time. But whether the methods chosen by any given

company (e.g., frequency of pigging; type of pig used; response to anomalies identified) meet reasonable and appropriate standards is very much in question.

The federal requirements do not include regular testing or inspection, so problems are often only uncovered on an emergency basis or if a report is made if the pipe is accidentally hit during some unrelated construction project. Additionally, federal procedures do not define what an adequate testing process would be. They do not require more stringent standards for older pipelines despite the older age of many lines.

Testing on a regular basis using appropriate methods is important to assure safety. It's also important that the pipeline companies be encouraged to share the results of that testing with states and local communities to ensure accountability. Pipeline testing and follow-up is a major area of concern because there is no routinely required testing of pipelines and no independent third party monitoring of the follow-up to test results. This lack of third party accountability is our major criticism of Olympic's otherwise positive start with their Pipeline Safety Action Plan. Federal requirements should more strongly provide for this third party oversight. They do not at present in any effective way. We support federal legislation which will allow state level independent oversight of routine testing with teeth to follow up on deficiencies by operators.

Various testing devices are used. "Smart pigs", so named because they make a squealing noise as they are pushed through the pipe by the fluids, measure pipe geometry and pipe wall thickness and can infer the existence of various anomalies. There is no oversight of how pipeline operators use (or don't use) the data from smart pig and other testing. The Olympic Pipeline was smart pigged in 1996-7 throughout the state and over 250 anomalies were found, but before June 10, 1999, according to a July article in the Seattle Times, Olympic had only fixed a few of these and determined that the remainder were insignificant. (One of the supposedly "insignificant" anomalies was at or very close to the point of the June 10 rupture in Bellingham.)

We have this same situation in SeaTac and throughout the rest of the Olympic Pipeline system. Anomalies have been found in the limited 1996 voluntary testing showing deterioration but assessed by Olympic to not require excavation to verify or repair. In SeaTac there are at least seven anomalies none of which have been verified by physical inspection and none of which was determined by Olympic to require repair. This information was only recently disclosed to us by Olympic after much lengthy effort by the City. Similar experience in neighboring cities with more complete review to date than we have been able obtain in SeaTac has disclosed serious pipeline deterioration with no follow up by Olympic. We fear the same situation exists in SeaTac. The Pipeline Company has scheduled but not yet held sessions with the cities to explain their actions. We should not be in this situation

and it does not appear to be unique to Olympic but an industry wide practice. In fact, I understand that federal standards while not requiring testing, allow up to eighty percent erosion of the thickness of a pipe wall before replacement is required. This should be investigated. Regular effective testing should be required against proper standards with independent oversight of the results and follow-up.

Another form of testing is “hydrostatic”. This means that the line is emptied of petroleum products and filled instead with water at deliberately higher pressure. Current Federal regulations call for hydrostatic testing only when a pipeline is newly installed. Bellingham required a new round of hydrotesting before re-opening that section of the line. Both hydrotesting and smart pigging have their advantages and weaknesses. Neither is a substitute for the other. We believe both testing approaches should be used and if properly conducted do no harm to the pipeline.

Pipeline companies describe the difficulties with more frequent hydrostatic testing as follows. Such testing means they must stop shipping product to perform the test (unlike pig testing), and must purchase and then treat and dispose of large volumes of water, as well as fully removing water from the pipe after testing, in order not to contaminate the next petroleum products.

Pipeline companies may also claim that hydrotesting is done at unrealistically high pressures, causing failures when none would occur during normal operation. We do

not believe that this is true, as pipelines may fail at normal operating pressure for many reasons. It is also claimed that hydrostatic testing damages the line. That is possible if pressures are too high, but experts have told the City that properly controlled hydrostatic tests are “non-destructive” i.e. they cause no damage to the line. In fact, as evidence of its effectiveness, hydrostatic testing is the only test method that can currently determine certain defects. It is worth noting that before Olympic performed the required hydrostatic tests in Bellingham, they first did several repairs to anomalies on the line that smart pigging had previously identified. Even so, the hydrostatic test demonstrated additional pipe weaknesses when leaks occurred during the testing.

The federal Office of Pipeline Safety (OPS) which administers the national Pipeline Safety Act, is years and sometimes decades behind in implementing the recommendations of the National Transportation Safety Board (NTSB). OPS can, in many cases, act administratively but has often not done so. It is clearly an advantage that the safety body (the NTSB) is independent and reports directly to Congress, but a disadvantage that its recommendations are not mandatory.

OPS is empowered to pick certain states to which it will hand off its authority and did so with a handful of states, including California, Minnesota, New York and Arizona. For reasons that are not clear, OPS subsequently decided that no more states would be granted this opportunity. States need the right to adopt more

stringent safety requirements (that are also tailored to the local environs) than OPS has in place at present.

Leak detection as I touched on earlier is another very important issue. There is no federal requirement for pipeline operators to use leak detection systems, and thus no standards for what would comprise adequate leak detection. At present, leaks are mainly noticed because of a drop in pipeline pressure. But if computers and gauges are not operating, a huge leak (hundreds of thousands of gallons) can go undetected for far too long. Olympic presently relies on pressure monitoring in the Renton control center, and over-flying the line every couple of weeks, to detect leaks. Independent, redundant leak detection systems are vital in highly populated and environmentally sensitive areas.

Another leak detection problem relates to slow, persistent leaks. These are too small to be detected by the pressure gauges. But undetected for weeks, months, or even years, they, too, can contaminate groundwater with hundreds of thousands of gallons of petroleum product. For example, a persistent leak in Renton, Washington in 1986 was undetected for over one year and contaminated an aquifer that remains polluted to this day. The recently detected incident in Delaware, where 600,000 gallons leaked over twelve years again demonstrated this problem.

In addition to the above, a review should be undertaken to insure that the pipeline

system has proper overpressure protection safety equipment in place. Such equipment should not only prevent excess pipeline pressures, but also reduce unnecessary pressure cycling (i.e., pressure surges) that can significantly “age” a pipeline.

Federal regulations are in place to protect workers and the public in or near facilities such as refineries and chemical plants. These regulations, however, do not protect the public living near pipelines. Pipelines are specifically exempted from such “process safety management” requirements intended to ensure that equipment is designed, maintained, and operated safely. One has to have plans reviewed and a permit issued to add a deck on a house. No such technical review or permit is required to build, modify or operate a pipeline.

Many of the problems associated with pipeline safety could be addressed if pipeline operators were held to a standard to be tested for competency and certified to meet minimum qualifications. This is another area not at all uncommon in other critical industries that should be addressed for pipelines through federal legislation allowing states to do this.

We support the legislation now before Congress: S. 2004 and HR 3558 and encourage you to act now to pass these bills that will help stop the repeated preventable leaks and explosions that cause so much safety concern in our community.

Again, thank you for your attention to these issues of vital concern to us.